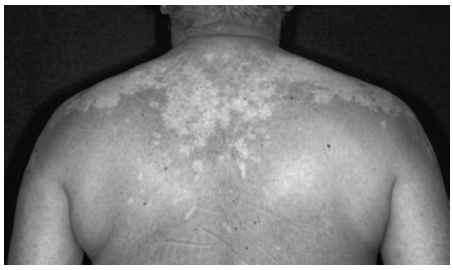
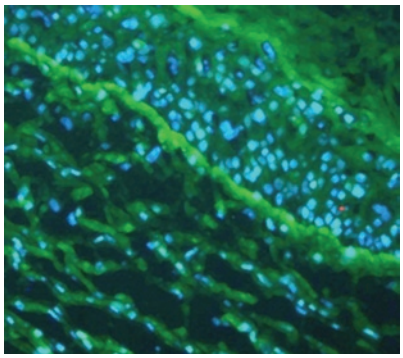
Epithelial Interferon



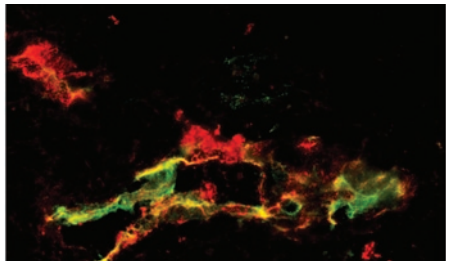
In agreement with the similarities between type I IFNs and the newly identified type III IFN (IFN-λ) specific for epithelial cells, Zahn and colleagues provide evidence that keratinocyte-derived IFN-λ plays a functional role in the pathophysiology of cutaneous lupus erythematosus (CLE). This cytokine was expressed in the epidermis of CLE skin lesions and was detected at increased levels in CLE patient serum. IFN-λ was also expressed similarly to the chemokine CXCL9, which is a relevant ligand for the induction of systemic lupus erythematosus in mice. These results suggest that this cytokine supports lesional inflammation and drives inflammatory recruitment of immune cells in CLE. ***See page 133***

Trans-splicing Treatment



Gene therapy to correct premature termination mutations in the type VII collagen gene is critical for treatment of severe forms of dystrophic epidermolysis bullosa (DEB); however, commonly used retroviral vector delivery systems are limited because of the 118-exon *COL7A1* mRNA. Thus, Murauer and colleagues demonstrated that 3′ *trans*-splicing, involving a gene repair mechanism in which the cell spliceosome recombines the endogenous target pre-mRNA and an exogenously delivered RNA molecule to generate a new reprogrammed mRNA, results in full reversion of the recessive DEB (RDEB) phenotype in cell culture. This breakthrough lays a foundation for *ex vivo* gene therapy approaches to RDEB. ***See page 74***

A Link between Metastasis and Angiogenesis



Because lymphatic invasion is linked to metastasis in many cancers, Moussai and colleagues explored this relationship in cutaneous squamous cell carcinoma (SCC). Indeed, increased lymphatic vessel density and upregulated lymphangiogenesis genes were associated with SCC. In addition, vascular endothelial growth factor-C (VEGF-C), a critical lymphangiogenesis mediator, was upregulated in inflammatory cells surrounding SCC, and peritumoral macrophages were identified surrounding SCC, suggesting that these cells may be a source of VEGF-C in the tumor microenvironment. These new insights into the mechanism of lymphangiogenesis adjacent to SCC may offer avenues for the development of therapeutics for aggressive or inoperable tumors. ***See page 229***

AD in the United States

Because most data concerning the prevalence of atopic dermatitis (AD) in industrialized countries derive from European population studies, Shaw and colleagues determined the prevalence of AD as well as geographic and demographic associations in the United States using data from the National Survey of Children's Health, which surveyed more than 100,000 families from all 50 states. The prevalence of AD in children in the United States was found to be 10.7%, in agreement with previous estimates. Considerable variability was observed among states and districts. Urban living, black race, and higher education were significantly associated with higher AD prevalence. ***See page 67***

Tanning Sensor

Investigations of the environmental link between the transcription factor aryl hydrocarbon receptor (AhR) and melanogenesis by Jux and colleagues revealed that mice deficient in AhR exhibited decreased tanning and tyrosinase activity in response to UVB irradiation. This AhR-dependent response is specific to melanocytes and involves a UVB-mediated increase in melanocyte density and changes in gene expression. Importantly, these results suggest that modulation of AhR signaling in melanocytes may be useful to induce or prevent skin pigmentation in healthy skin or perhaps to induce pigmentation in patients with vitiligo. ***See page 203***

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